



Commonwealth
of Massachusetts

Center for Health
Information and Analysis

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Mandated Benefit Review of H.B. 321: An Act Relative to Insurance Coverage for Craniofacial Disorders¹

February 2013

This report was developed by the Division of Health Care Finance and Policy and published by the Center for Health Information and Analysis.

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¹ Except where otherwise noted, a majority of the language in this report is taken directly from the actuarial analysis by Oliver Wyman; the full text of the Actuarial Report can be found on the CHIA website.

Table of Contents

Introduction	1
Overview of H.B. 321	1
Financial Impact	2
Medical Efficacy: A Literature Review	5
Conclusion	7

Introduction

On December 1, 2011 the Joint Committee on Health Care Financing referred *House Bill No. 321: An Act Relative to Insurance Coverage for Craniofacial Disorders* (H.B. 321) to the Division of Health Care Finance and Policy (the Division) for review. Pursuant to the provisions of section 38C of chapter 3 of the General Laws of Massachusetts, which requires the Division (now the Center for Health Information and Analysis, or CHIA) to evaluate the impact of mandated benefit bills, the Division commissioned a study by Oliver Wyman to provide an actuarial estimate of the effect that enactment of the bill would have on the cost of health care insurance.² The full actuarial analysis was prepared by David Kerr and Dianna Welch.

This review is broken into four sections: (1) an overview of the mandate, (2) a summary of the actuarial analysis, (3) a literature review examining the medical efficacy of the bill's mandate, and (4) conclusions.

Overview of H.B. 321

As it is currently written, H.B. 321 would require insurers to provide coverage for medically necessary functional repair or restoration of craniofacial disorders to improve the function of, or to approximate the normal appearance of, any abnormal structures caused by congenital defects, developmental deformities, trauma, tumors, infections or disease. Coverage shall include the necessary care and treatment of medically diagnosed congenital defects and birth abnormalities, including, but not limited to cleft lip, cleft palate, ectodermal dysplasia, dentinogenesis imperfect, amelogenesis imperfecta, and other maxillofacial abnormalities. Coverage shall not include cosmetic surgery or for dental or orthodontic treatment unrelated to congenital defects, developmental deformities, trauma, tumors, infections or disease. All coverage shall be subject to any deductible, cost-sharing, and policy or contract maximum provisions, provided that they are no more restrictive for such services than for any injury or sickness covered under the policy.

The bill applies to:

1. Insurers of any individual policy of accident and sickness insurance under section 108 and any group blanket policy of accident and sickness insurance under section 110 regulated under Chapter 175 of the General Laws of Massachusetts.
2. Any contract between a subscriber and a corporation under an individual or group hospital service plan delivered, issued or renewed in the commonwealth, regulated under Chapter 176A of the General Laws of Massachusetts.
3. Any subscription certificate under an individual or group medical service agreement delivered, issued or renewed in the commonwealth, regulated under Chapter 176B of the General Laws of Massachusetts.
4. Any health maintenance contract regulated under Chapter 176G of the General Laws of Massachusetts.

Based on conversations with the bill's authors and staffers to the Joint Committee on Health Care Financing, it was concluded that, as the bill is currently written, the mandate shall not apply to procedures that are merely cosmetic in nature, with no related corrections to functional impairment.

² Oliver Wyman Actuarial Consulting, Inc. (October 11, 2012). Actuarial Review of Massachusetts House Bill 321, An Act Relative to Insurance Coverage for Craniofacial Disorders.

Financial Impact

Oliver Wyman estimated the financial impact of the mandate on total, marginal, and baseline costs. The total cost estimate includes the full cost of the covered benefits mandated by the bill based on assumptions of cost and utilization levels that would exist under a mandate. Because health insurance carriers are already providing many of the services, and incurring related costs which would be mandated, those are referred to as the “baseline” services and costs. The marginal costs reflect the additional costs that are expected to be realized by the affected population due to the mandate and equal the difference between our total and baseline cost estimates. Exhibit 1 shows the dollar impact on a per-member per-month (PMPM) basis, and Exhibit 2 shows the dollar impact for the projected affected population. More detail on the methodology employed in these projections is available in the full report.

Costs for cleft palate and cleft lip – two of the most common craniofacial disorders – are not included in the marginal cost estimates since they will already be mandated effective January 1, 2013 by passage of House Bill 4557, An Act Relative to Coverage for Cleft Palate and Cleft Lip.³ Instead, these costs are shown in the baseline cost.

The baseline, marginal and total 2012 cost estimates of the mandated benefits, as a percentage of total estimated 2012 cost levels for all benefits, are as follows:

- Baseline cost estimates: 0.08% to 0.19%
- Marginal cost estimates: 0.05% to 0.16%
- Total cost estimates: 0.13% to 0.35%

The estimated total premium costs for the mandated benefits for the period from 2013 through 2017 range from approximately \$81,259,000 to \$235,127,000, but it is important to note that these figures include the baseline costs of implementing H.B. 4557 (which has already passed). On a marginal basis, the H.B. 321 mandate would only increase premiums by \$32,097,000 to \$104,845,000 for the same five-year period. It is further estimated that 8.9-10.2% of premiums increases resulting from the mandate would be included for retention by carriers.

³ Estimated costs for House Bill 4557 can be found at: <http://www.mass.gov/chia/docs/r/pubs/09/cleft-palate-mb-report.pdf>

Exhibit 1

MPPM Claims and Premium due to House Bill 321

Total Cost		2012 Estimate		Projection of Mandate				
		Mandate	% Total	2013	2014	2015	2016	2017
Claims	Low	\$0.51	0.13%	\$0.53	\$0.54	\$0.56	\$0.57	\$0.59
	Middle	0.84	0.21	0.87	0.91	0.94	0.98	1.02
	High	1.37	0.35	1.44	1.51	1.59	1.67	1.75
Premium	Low	0.56	0.13	0.58	0.59	0.61	0.63	0.65
	Middle	0.93	0.21	0.96	1.00	1.04	1.08	1.13
	High	1.53	0.35	1.60	1.68	1.77	1.86	1.95
Marginal Cost		2012 Estimate		Projection of Mandate				
		Mandate	% Total	2013	2014	2015	2016	2017
Claims	Low	\$0.20	0.05%	\$0.21	\$0.21	\$0.22	\$0.23	\$0.23
	Middle	0.35	0.09	0.36	0.38	0.39	0.41	0.43
	High	0.61	0.16	0.64	0.67	0.71	0.74	0.78
Premium	Low	0.22	0.05	0.23	0.23	0.24	0.25	0.26
	Middle	0.39	0.09	0.40	0.42	0.44	0.45	0.47
	High	0.68	0.16	0.72	0.75	0.79	0.83	0.87
Baseline Cost		2012 Estimate		Projection of Mandate				
		Mandate	% Total	2013	2014	2015	2016	2017
Claims	Low	\$0.31	0.08%	\$0.32	\$0.33	\$0.34	\$0.35	\$0.36
	Middle	0.49	0.12	0.51	0.53	0.55	0.57	0.59
	High	0.76	0.19	0.80	0.84	0.88	0.92	0.97
Premium	Low	0.34	0.08	0.35	0.36	0.37	0.38	0.39
	Middle	0.54	0.12	0.56	0.58	0.61	0.63	0.65
	High	0.85	0.19	0.89	0.93	0.98	1.03	1.08

Exhibit 2

Claims and Premium due to House Bill 321

Estimate of Commercially Insured Population		2,210,942*							
Total Cost (in \$millions)		2012 Estimate		Projection of Mandate					
		Mandate	% Total	2013	2014	2015	2016	2017	2013-2017
Claims	Low	\$13.5	0.13%	\$13.9	\$14.4	\$14.8	\$15.2	\$15.7	\$74.0
	Middle	22.3	0.21	23.2	24.1	25.0	26.0	27.1	125.4
	High	36.4	0.35	38.2	40.1	42.1	44.2	46.4	211.1
Premium	Low	14.9	0.13	15.3	15.8	16.2	16.7	17.2	81.3
	Middle	24.5	0.21	25.5	26.5	27.6	28.7	29.9	138.3
	High	40.5	0.35	42.6	44.7	46.9	49.3	51.7	235.1
Marginal Cost (in \$millions)		2012 Estimate		Projection of Mandate					
		Mandate	% Total	2013	2014	2015	2016	2017	2013-2017
Claims	Low	\$5.3	0.05%	\$5.5	\$5.7	\$5.8	\$6.0	\$6.2	\$29.2
	Middle	9.3	0.09	9.7	10.1	10.5	10.9	11.3	52.4
	High	16.2	0.16	17.0	17.9	18.8	19.7	20.7	94.2
Premium	Low	5.9	0.05	6.0	6.2	6.4	6.6	6.8	32.1
	Middle	10.3	0.09	10.7	11.1	11.5	12.0	12.5	57.8
	High	18.1	0.16	19.0	19.9	20.9	22.0	23.1	104.8
Baseline Cost (in \$millions)		2012 Estimate		Projection of Mandate					
		Mandate	% Total	2013	2014	2015	2016	2017	2013-2017
Claims	Low	\$8.2	0.08%	\$8.4	\$8.7	\$9.0	\$9.2	\$9.5	\$44.8
	Middle	13.0	0.12	13.5	14.0	14.6	15.2	15.8	73.0
	High	20.2	0.19	21.2	22.2	23.3	24.5	25.7	117.0
Premium	Low	9.0	0.08	9.3	9.5	9.8	10.1	10.4	49.2
	Middle	14.3	0.12	14.9	15.4	16.1	16.7	17.4	80.5
	High	22.5	0.19	23.6	24.8	26.0	27.3	28.7	130.3

* According to the actuarial analysis, the estimated commercially insured population will remain constant for the next five years. Details on the calculations involved in this estimate can be found in the body of the full actuarial report by Oliver Wyman.

Medical Efficacy: A Literature Review⁴

M.G.L., c. 3 § 38C (d) requires the Division (now CHIA) to assess the medical efficacy of mandating the benefit, including the impact of the benefit to the quality of patient care and the health status of the population and the results of any research demonstrating the medical efficacy of the treatment or service compared to alternative treatments or services or not providing the treatment or services. Because the medical condition of craniofacial disorder encompasses such a wide range of medical issues, in order to determine the medical efficacy of H.B. 321, the Division conducted a literature review of the research specifically in ectodermal dysplasia (ED), which overlaps with and can describe a sizeable portion of craniofacial disorders.⁵ The medical and dental procedures used to treat the conditions of ED discussed in this section would be covered by the mandate.

Facial and/or physical disfigurement relating to ED can range from mild to severe: all or only some teeth can be missing; a tooth or teeth can appear pointed, widely spaced, malformed or conical in nature; or an individual may have an excessive number of cavities due to absence of enamel. Individuals with the complete or partial loss of teeth have difficulty with speech and chewing. Absence of all or most teeth can also lead to underdevelopment of the jaws, compounding one's chewing difficulties and leading to an aged appearance in the face. The impact of dental abnormalities on the psychological development in young adults with ED is also frequently cited in the literature.^{6,7} For these various reasons, dentures or dental implants are often recommended.

While a delay in wearing dental prostheses may result in social withdrawal and related adjustment difficulties for some, early fitting of dentures does not necessarily guarantee either peer or self-acceptance for all ED patients.⁸ These patients sometimes have, in addition to dental abnormalities, other facial and/or physical disfigurement, which could lead to adjustment difficulties (despite having dental prostheses) in adolescents and children.

Efficacy of dentures as prostheses:

Many studies have discussed the importance of dentures in ED patients, especially children⁹ although dentures might be best suited for individuals with a few natural teeth. Natural teeth can bear chewing pressure, reducing the pressure on the jaw and helping to preserve the bone.

Various types of dentures are available. An overdenture (a type of denture) is often recommended for children and adults with a few natural teeth as it helps reduce mobility of the remaining teeth and helps prevent bone loss. Complete dentures however, do not prevent bone loss and are uncomfortable because well-fitting dentures are difficult to create for ED patients with severe teeth loss owing to the extremely thin alveolar ridge present.

4 A majority of the language in this section is taken directly from the Medical Efficacy Section of the Division's Mandated Benefit Report of S.B. 837, An Act Mandating Coverage for Ectodermal Dysplasia (March 2005): <http://www.mass.gov/chia/docs/r/pubs/mandates/ectodermal-dysplasia.pdf>.

5 Despite the impracticality of examining the medical efficacy of all procedures employed to treat or correct a myriad of craniofacial disorders, we caution that there are limitations to this narrower approach: it is likely that several syndromes within the craniofacial disorder classification require medical treatments not discussed in this medical efficacy review.

6 Tanner BA. (1988). Psychological aspects of hypohidrotic ectodermal dysplasia. *Birth Defects Original Article Series*, 24 (2), p263-75.

7 Abadi B, Herren C. (2001). Clinical treatment of ectodermal dysplasia: a case report. *Quintessence International*, 32(9), p743-5.

8 Tanner BA. (1988). Psychological aspects of hypohidrotic ectodermal dysplasia. *Birth defects: original article series*: New York: Alan. R. Liss: 24(2), p263-275.

9 Guckes AD. (2002). Prospective clinical trial of dental implants in persons with ectodermal dysplasia. *Journal of Prosthetic Dentistry*, 88(1), p21-5.

Efficacy of dental implants as prostheses:

The effectiveness of dental implants in ectodermal dysplasia patients has been demonstrated by a number of studies.¹⁰ The overall cumulative success/non rejection rate is estimated to be 93.9 percent.¹¹ Implants can replace one tooth or an entire set of teeth and are successful in providing support to full or partial dentures.¹² The most important advantage to implants is that they help reduce bone loss. Ectodermal dysplasia patients often have underdeveloped alveolar ridges (jaw bones) so dentures cannot provide adequate support and can be difficult to maintain.

However, implants may not be suitable for all. Rejection occurs in about one in 20 implants. In addition, there is some debate on the efficacy of placing implants in individuals with a significant number of teeth lost in the lower jaw without damaging the nerves that run through the lower jaw.¹³ Therefore, some studies emphasize the need to offer proper treatment planning, and to allow the patient to make informed decisions before placing implants.¹⁴

Efficacy of dental prostheses in children:

The use of dental implants in children is controversial. The conventional treatment for children has been the use of dentures before skeletal and dental maturation. From a physiological standpoint, the conservation of bone may be the most important reason for the use of dental implants in growing children. However, studies have shown that dental implants may not be successful in children and infants. Studies indicate that doctors recommend use of conventional prostheses (i.e., dentures or overdentures), as early as age 3, until the completion of all skeletal and dental growth (recommended age is 15-16 years¹⁵), at which time an implant-assisted treatment may begin.^{16,17}

Alternate treatment

Not all individuals with dental abnormalities will need dental implants or dentures. Individuals with malformed or disfigured teeth may have other less expensive options such as crowns.

Dental crowns, a common method of treating malformed teeth, appear to be more advantageous than dentures and implants for individuals with mild ED: crowns preserve the natural teeth that help retain the jaw bone and avoid displacement of neighboring teeth. Depending on physician recommendation, this could be a less expensive alternative to implants with the average cost ranging from \$500 to \$900¹⁸ or more per crown.

10 Balshi TJ, et al. (2002). Treatment of congenital ectodermal dysplasia with endosseous implants: A case report. *The International Journal of Oral & Maxillofacial Implants*, 17 (2), p277-81.

11 Higuchi KW. (1995). Implant survival rates in partially edentulous patients: a 3-year prospective multicenter study. *Journal of Oral and Maxillofacial Surgery*, 53(3), p264-8.

12 Doundoulakis JH, et al. (2003). The implant-supported overdenture as an alternative to the complete mandibular denture. *Journal of the American Dental Association*, 134 (11), p1455-58.

13 Bone augmentation and nerve positioning. (2002). Aetna, Inc. Retrieved from www.simplestepsdental.com

14 Nazarian Y, et al. (2003). Nerve injury following implant placement: prevention diagnosis and treatment modalities. *Refuat Hapeh Vehashinayim*, 20(3), p44-50.

15 Ledermann PD, et al. (1993). Osseointegrated dental implants as alternative therapy to bridge construction or orthodontics in young patients: seven years of clinical experience. *Pediatric Dentistry*, Sept-Oct: 15(5), p327-33.

16 Bector KB, Bector JP, Keller EE. (2001). Growth analysis of a patient with ectodermal dysplasia treated with endosseous implants: a case report. *International Journal of Oral Maxillofacial implants*, Nov-Dec: 16 (6), p864-74.

17 Cronin RJ Jr, Oesterle LJ. (1998). Implants use in growing patients. Treatment planning concerns. *Dental Clinics North America*, Jan 42(1), p1-34.

18 Commonwealth of Massachusetts, Division of Health Care Finance and Policy. (2005). Mandated Benefit Review: Review and Evaluation of Proposed Legislation to Mandate Coverage for Ectodermal Dysplasia: Senate Bill 837. Retrieved from <http://www.mass.gov/chia/docs/r/pubs/mandates/ectodermal-dysplasia.pdf>, (page 7).

Conclusion

CHIA does not take a position in support of, or in opposition to, any legislation referred for review, but we do conclude the following:

1. Implementation of H.B. 321 would increase the cost of claims and premiums between 0.05 and 0.16 percent. The estimated premium costs for the mandate for the next five years range from approximately \$32,097,000 to \$104,845,000.
2. Our actuaries estimate that 8.9-10.2 percent of premiums increases resulting from the mandate would be included for retention by carriers.
3. Implementation of H.B. 321 would not likely increase the number or types of providers of the mandated treatment or service significantly over the next five years.
4. The total estimated mean lifetime cost of dental and orthodontic procedures necessary for the treatment of craniofacial disorders is \$16,585. Most families are finding ways to pay for the dental and orthodontic procedures that are not currently covered, either by paying out of pocket, receiving some coverage from dental insurance plans, or through charitable organizations. The mandate would represent a shift in cost of dental and orthodontic services from consumers, dental insurers, and charitable organizations to the medical insurance carriers, but there is no data available to suggest the magnitude of this portion of the cost.



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Publication Number: 13-39-CHIA-01
Authorized by Gary Lambert, State Purchasing Agent

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